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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,809	01/29/2001	Glenn G. Amatucci	APP 1372-US	7825

7590

05/15/2002

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EXAMINER

MERCADO, JULIAN A

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 05/15/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/771,809

Applicant(s)

AMATUCCI, GLENN G.

Examiner

Julian A. Mercado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 8-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-7, drawn to the process of making, classified in class 423, subclass 598.
- II. Claims 8-10, drawn to the product made, classified in class 429, subclass 231.1.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by another materially different process such as one employing sintering of a colloidal solution, lyophilisation of a TiO_2 powder and mechanical milling of the powders into the desired grain size. See, for example, the disclosure of Exnar et al. as discussed below.

During a telephone conversation with David Hey on May 7, 2002, a provisional election was made with traverse to prosecute the invention of Group II, claims 8-10. Affirmation of this election must be made by applicant in replying to this Office action. Claim 1-7 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Peramunage et al. ("Preparation of Micron-Sized $\text{Li}_4\text{Ti}_5\text{O}_{12}$ and its Electrochemistry in Polyacrylonitrile Electrolyte-Based Lithium Cells", *J. Electrochem. Soc.*, 1998, Vol. 145, No. 8, pp. 2609-2615).

Peramunage teaches a particulate zero strain lithium titanate intercalation compound such as $\text{Li}_4\text{Ti}_5\text{O}_{12}$. (page 2609 under the heading "Introduction") As to this particulate material being a nanostructure, Peramunage specifically teaches that the $\text{Li}_4\text{Ti}_5\text{O}_{12}$ has "submicron dimensions" while further having "even finer particles and smaller agglomerates". (page 2610, 1st full paragraph of the 2nd column)

Claim 9 is drawn to a particulate lithium titanate intercalation compound. As above, Peramunage teaches a particulate lithium titanate intercalation compound such as $\text{Li}_4\text{Ti}_5\text{O}_{12}$. As to the limitations in claim 9 drawn to providing a mixture, heating said mixture, holding said mixture at a specified annealing temperature, and cooling the resulting particles, these limitations have not been given patentable weight as the method limitations do not further limit the product claim.

Claim 10 is drawn to this nanostructure particulate zero strain lithium titanate intercalation compound as an active material in a rechargeable battery. Peramunage specifically teaches an anode comprising the $\text{Li}_4\text{Ti}_5\text{O}_{12}$ material. (p. 2610 under the heading "Preparation of

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thin composite electrodes”) A separator such as a polymer electrolyte membrane is interposed between the negative and positive electrode members, i.e. the anode and cathode electrodes. (p. 2610 under the heading “Electrochemical characterization of cells made of $\text{Li}_4\text{Ti}_5\text{O}_{12}$ and LiMn_2O_4)

Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Exnar et al. (U.S. Pat. 5,569,561).

Exnar teaches a particulate lithium titanate intercalation compound. (col. 2 lines 45-48)

As to the limitations drawn to providing a mixture, heating said mixture, holding said mixture at a specified annealing temperature, and cooling the resulting particles, these limitations have not been given patentable weight as the method limitations do not further limit the product claim.

Conclusion

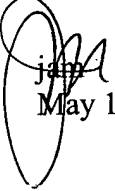
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511.

The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 305-3599 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


May 13, 2002


STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP

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